

The opinion in support of the decision being entered today was  
not written for publication and is not binding precedent of the Board

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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~~Ex parte~~ ISAMU TOBITA

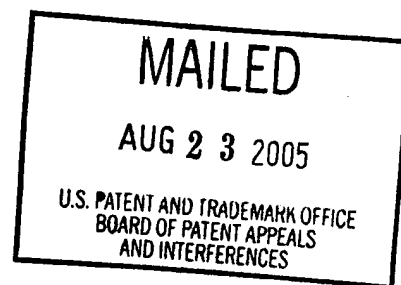
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Appeal No. 2005-1384  
Application 09/886,200

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ON BRIEF

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Before THOMAS, SAADAT and NAPPI, ~~Administrative Patent Judges.~~

THOMAS, ~~Administrative Patent Judge.~~

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final  
rejection of claims 1-13.

Representative claim 1 is reproduced below:

1. An impact printer comprising:  
pins for providing an impact; and

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an impact force controller for changing the force with which the pins impact in accordance with the settings for characters that are to be printed.

The following references are relied on by the examiner:

Kobayashi et al. (Kobayashi)	4,566,813	Jan. 28, 1986
Ohsawa et al. (Ohsawa)	4,774,882	Oct. 4, 1988
Kikuchi et al. (Kikuchi)	5,039,238	Aug. 13, 1991

IBM Technical Disclosure Bulletin, "Electronic Control of Print Impact in Single Element Typewriters," Vol. No. 21, Issue 10., pp. 4110-4112 (March 01, 1979).

Claims 1-13 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Kikuchi in view of Ohsawa as to claims 1-4, 6, 10 and 11, with the addition of IBM as to claims 5, 12 and 13. As to claims 7-9, the examiner relies upon Kikuchi in view of Kobayashi.

Rather than repeat the positions of the appellant and the examiner, reference is made to the brief and reply brief for the appellant's positions, and to the answer for the examiner's positions.

**OPINION**

For the reasons set forth by the examiner as embellished upon here, we sustain each of the three separately stated rejections of the claims on appeal.

As to the first stated rejection, the examiner generally states at pages 4 and 6 of the answer in the Statement of the Rejection relating to the subject matter of independent claims 1, 2, 4, 6, 10 and 11 that Kikuchi teaches all of the limitations recited in each of the respective independent claims except for the feature relating to changing the impact force according to the settings of characters to be printed. Kikuchi is a dot-matrix printer utilizing a wire-dot printhead which varies its print force by varying the time and/or voltage or other parameter (column 12, lines 5-10) to optimize print force for varying paper thicknesses and/or copies to be printed either automatically by the use of the set parameters or under operator control. Likewise, Ohsawa is a dot-matrix type printer that controls its impact energy or print force based on variable print densities

such as a normal or high print density as illustrated in Figures 1 and 2 by varying the time, voltage and other current or overall power.

We agree with the examiner's implicit view that the ability to vary the print density by controlling the printing force to achieve variable print densities directly relates to the claimed feature of changing impact forces according to settings of characters. Thus, it would have been an obvious enhancement to the system of Kikuchi to have added the teachings of Ohsawa to vary the print force when the need arises to vary the print density from a normal to a high density range, for example. Clearly, from an artisan's perspective this would have been an advantageous enhancement to the overall print control arrangement of Kikuchi. Ohsawa's control circuitry in Figure 6 compares from a broad controller perspective to the prior art control arrangement in Kikuchi and his own particular embodiments in Figure 7 and 7A. It appears to us that the artisan would view Kikuchi as limited to a given font or a particular character thickness, whereas different print densities or thicknesses are

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capable of being printed according to the variable print density teachings of Ohaswa.

Like the examiner's remarks at page 11 of the answer, appellant is inviting us to limit the scope of meaning of the term "character set" by essentially arguing the disclosed limitations thereof, which are not specifically claimed, as argued at page 3 of the principal brief on appeal. It is clear that the combined teachings of the references contain that broadly claimed data analyzer for determining the type of character set to be printed as in claim 11. Appellant's arguments in the principal brief principally at pages 3-8 appear to limit the teachability of the combined teachings of Kikuchi and Ohsawa. The examiner in the reasoning set forth in the answer recognizes that Kikuchi does not teach everything recited in the respective independent claims on appeal as set forth in the initial statement of the rejection, so that it is not helpful in the analysis to continue to urge what the examiner already admits.

We recognize that the examiner's reasoning of combinability that it would have been obvious for the artisan to have combined Ohaswa's

teachings with those in Kikuchi "so that a design density for a selected character can be achieved" would appear to be somewhat presumption or cursory in its analyses. On the other hand, this quoted language succinctly distill the rational we set forth earlier in a more expanded manner since Ohsawa does advantageously add to the teachings of Kikuchi the ability to selectively control the print force for selected characters based on print density. The ability to control in Ohsawa is with respect to individual characters, rows of characters and the entire articles to be printed in accordance with the teachings and suggestions at column 1, lines 43-55 and column 6 and generally argued by the examiner in the formulation of the rejection, noting particularly lines 13-17 and 25-34. We therefore do not understand appellant's urgings at page 7 of the brief that the examiner's motivation wrongly appears to be have been gleaned from the secondary reference to Ohsawa to which is perplexingly argued as not evidence as to why the artisan would have combined Ohsawa's teachings with Kikuchi. Plainly, Ohsawa adds a capability to Kikuchi's teachings that is not readily recognized within its own content.

Appellant's arguments at pages 8-10 of the principal brief on appeal are equally misplaced to the extent appellant urges that the combination of Kikuchi and Ohsawa would have changed the operation of the Kikuchi reference such that it would be unable to perform its intended purpose. Our study of both references as set forth earlier does not lead us to that conclusion. What appellant appears to be directly arguing is the structural combinability of the references would have led to the inoperability of the Kikuchi reference. Structural combinability is not the proper analytical basis in considering the combinability of teachings within 35 U.S.C. § 103. It is the teachings themselves.

Additionally, we agree with the examiner's reasoning set forth beginning at page 11 of the answer that appears to take the position that Kikuchi alone teaches the subject matter of the more specific independent claims 10 and 11 among those set forth in the first stated rejection. We agree with the examiner's views here that the CPU 101 in Kikuchi may be considered to have met the broad limitation of identifying a character set to be printed in claim 10 and the corresponding data analyzer in claim 11.

Following the examiner's rationale, it appears that a character set is consistent with a set of characters to be printed overall as well as for any given work/group of words to be printed. Further, Kikuchi has the ability to selectively print based on the control information relating to the number of pages and the number of sheets of paper to be printed for each set of characters.

As to the first stated rejection of claims 1-4, 6, 10 and 11, appellant has set forth no arguments relating to independent claims 1, 2, 4 and 6 and their respective dependent claims represents only arguments with respect to independent claims 10 and 11 which the examiner has addressed and we have addressed earlier in this opinion. The reply brief sets forth essentially repetitive arguments to those set forth in the reply brief and appears not to come to grips with the breadth of the claimed character sets or set of characters and the like set forth in all of these independent claims. Arguments as to independent claims 1, 2, 4 and 6 are only broadly set forth at the top of page 4 of the reply brief which sets forth features more broadly than those argued in independent claims 10



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and 11 in the form of settings for characters to be printed. Clearly, to the artisan, within 35 U.S.C. § 103 over Kikuchi alone and/or in view of Ohsawa the references teach the ability to control individually settings for characters to be printed.

We turn next to the rejection of dependent claim 5 and independent claims 12 and 13 in the second stated rejection where the examiner relies upon Kikuchi in view of Ohsawa, further in view of IBM. In accordance with our analysis, the subject matter of claims 12 and 13 would have been obvious to the artisan even when the subject matter of IBM is considered to be cumulative to that set forth for Ohsawa.

These claims specifically recite a font change which, in accordance with the examiner's views is consistent with the high density and low density teachings on Ohsawa. The broadly defined set up value in independent claim 13 is not set forth in claim 12. However, it is clearly noted that the read-only member 33 in Figure 6 of Ohsawa contains setup values for the respective different fonts or print densities which provides

the basis for the control by the CPU 32 in a manner corresponding to the CPU 101 in Figures 7 and 7A in Kikuchi. As to Ohsawa, different data values are prestored in ROM 33 for normal densities and high density imprint functions. This is depicted in Figures 7, 8A and 8B. All this is consistent with the additional, cumulative teachings in IBM which relates to the ability even for a single element typewriter to selectively control several print velocities or impacts for a wide range of character sizes to be printed in accordance with logic and control element 15 in IBM's figure.

Therefore, we are unpersuaded by appellant's arguments as to this rejection beginning at page 10 of the principal brief on appeal since the combined teachings of Kikuchi and Ohsawa plainly teach a data analyzer as broadly claimed relating to changing character fonts. Since both Kikuchi and Ohsawa teach that print force or print impact may be directly control in part based upon time, this implicitly includes that the concept that the velocity is changed with the time is changed as set forth in dependent claim 5 on appeal to the extent argued at the bottom of page 11 of the

principal brief. All this is in addition to the more specific teachings of changing the velocity for each character in a given font to be printed.

Appellant's arguments at page 15 of the principal brief on appeal that the examiner has not established a reasonable expectation of success once again attempts to argue the combinability based upon a structural combinability approach. Arguments relating the specifics of the typewriter of IBM are misplaced to the extent we have already indicated earlier that the teachings in IBM are cumulative, notwithstanding the proper basis to assess the references within 35 U.S.C. § 103 as combining their teachings and not their structures. In view of these remarks, appellant's urgings at pages 5-7 of the reply brief do not persuade us of the patentability of the subject matter of claims 5, 12 and 13.

Lastly, we turn the third stated rejection of claims 7-9 under 35 U.S.C. § 103 as being obvious over Kikuchi in view of Kobayashi. At the outset, appellant's arguments beginning at page 16 of the principal brief and page 7 of the reply brief do not assert any urging of patentability with

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respect to independent claim 7 on appeal. As such, the rejection of this claim is clearly sustained.

On the other hand, appellant's arguments in both the brief and reply brief focus only on independent claim 8 and its dependent claim 9. The examiner's rational of combinability recognizes that in independent claims 7 and 8 that the number of dots that are arranged across the width of lines forming a given print image and a controller to change the mode of operation of Kikuchi is not found within this reference. The examiner properly relies upon Kobayashi as advantageous modifying reference such It teaches the ability to control the pulse width for given print heads again in a dot-matrix type printer in accordance with the total number of dots used to print the character or an image or the total numbers of dots that are arranged across the width or line forming a print image to the extent claimed. The examiner correctly makes note to the dot counter and element 14 in Figure 3. Additionally, we make reference to the complete teachings shown in Figures 3-5 of Kobayashi. By counting the number of dots to be printed forming a given character, Kobayashi additionally

teaches the ability to control the width of the current pulse to effectively informally control the print thickness. Since both references desire to perform a wide variety of printing operations with constant quality, the artisan clearly would have found it obvious to have utilized the teachings of Kobayashi to modify those of Kikuchi.

Although not brought out by the examiner, Kikuchi's Figures 19 and 20 illustrate that varying the print force is a function of varying the power supply voltage as well as the so-called reference voltage in addition to the number of pins that are simultaneously actuated to print a given character to illustrated in Figure 20. This is discussed beginning at column 11, line 19. Thus, it is our view that the artisan clearly would have seen the advantageous combinability of the modifying teachings of Kobayashi to those already taught in Kikuchi. Moreover, it appears that the broad recitation of varying the impact force in accordance with the number of dots that are arranged across the width of a line to be printed is consistent with the teaching value of Kikuchi alone. Since Kikuchi teaches half-tone printing and variable dot size and darkness printing, at the end of the

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paragraph at column 12, lines 21-34, various mode changes set forth in claims 8 and 9 would have been contemplated by Kikuchi alone. It is thus believed that these remarks buttress the examiner's views expressed in the answer as to the rejection of claims 7-9 under 35 U.S.C. § 103.

In conclusion and in view of the foregoing, the decision of the examiner rejecting claims 1-13 under 35 U.S.C. § 103 is affirmed.



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